REMARKS/ARGUMENTS

Claims 1-36 are pending in the application. Claims 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 17, 18, 19, 25, 26, 29, and 31 have been amended. Reconsideration is respectfully requested. Applicants submit that the pending claims 1-36 are patentable over the art of record and allowance is respectfully requested of claims 1-36.

Applicants would like to thank Examiner Diaz for holding a telephone conference with their representative, Janaki K. Davda, on February 10, 2004, at 3:00 p.m. (EST). Proposed amendments to claim 1 and the Randell patent were discussed. Also, the 101 rejection was discussed.

In paragraph 5, claims 1, 3, 4, 6-8, 11-13, 15, 17, and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The Office Action states that the steps of claims 1, 3, 4, 6-8, 11-13, 15, 17, and 18 could be performed by hand and the Examiner requests a clarification to the claim language that the process is automated by a computer.

Applicants have amended claims 1, 3, 4, 6, 7, 11, 12, 13, 15, and 18 to indicate that certain processing occurs with a computing system, a user defined function or with a work process. Claim 8 already indicates that the processing is performed with a work process. Applicants' Specification at page 3, line 27 - page 4, line 22, and Fig. 1 describe that a computing system may comprise one or more work stations, where a server, a database, and worker processes, which are application programs, are implemented in one or more workstations. Also, page 6 of the Specification at lines 15-16 indicates that a user defined function is a program called from within a database program. Thus, the reference to either a computing system, a user defined function or worker process provides clarification that the process is automated and is not performed by hand.

With respect to claim 17, Applicants traverse. Claim 17 includes wherein clauses that further describe elements of claims from which claim 17 depends, such as claim 15, which has been amended to indicate that processing is performed by a work process. For example, claim 17 includes wherein clauses that describe that there are multiple work processes each associated with one input status and at least one output status, that each work process is enabled to update the job status with one associated output status after completing the processing of the job, that the output status for one work process is the input status associated with one other work process, and that the definition of input and output statuses for work processes defines the workflow of the job. Applicants respectfully submit that there is no need to further clarify the elements of claim 17.

In paragraph 7, the Office Action rejects claims 1-36 under 35 U.S.C. §102(e) as being anticipated by Randell (U.S. Patent No. 5,826,020). Applicants traverse these rejections for the following reasons.

With Applicants' invention, when the status column of a job is updated, then a trigger fires (event-driven) and executes a user defined function. This user defined function accesses a mapping to see what worker process should work on this job next using information (e.g., job ID) in a job status table. Each worker process will work on the jobs "sent" to it by the user defined function. The worker process gets job information from the job status table, processes the job, and updates the status of the job in the jobs table. Thus, each worker process is independent of all other worker processes in a workflow, and the user defined function/database has the information needed to process a job to completion. Worker processes may be added, removed or changed by changing the mapping. Therefore, the invention provides an event-driven system in which, when one worker process is done, the next worker process is given the job immediately, without a need for a scheduler process polling the database at intervals to see which jobs need to go to which worker process and without polling done by the worker processes to see if they have any jobs to work on.

In particular, Applicants' Specification at page 10, lines 25-27 describes that the input and output statuses defined for the worker processes defined the flow of jobs to and from the workers. Also, a job status table is a data structure that describes the jobs.

Claim 1 describes generating a signal when status for the job is changed from a first status to a second status in a job status table, wherein each status for the job is associated with a single work process for processing the job among multiple work processes, wherein each status refers to a next process to be performed by the single work process associated with the status, wherein each work process is an application program, and wherein the job status table identifies jobs on which work is performed. That is, each status describes a stage of processing in a work flow. For example, the status of a job may be ready, print, format, etc. (See, for example, Applicants' FIG. 2 and Specification at page 4, lines 25-27). Also, each work process that is associated with one status is an application program. (See, for example, Specification at page 5, lines 9-10). Each job identified in the job status table 10 comprises an entity on which work is performed under computer operation such as processing data, generating output materials, forwarding data to another location for further processing, printing, working on a material or device, etc. (See, for example, Specification at page 5, lines 3-7). Thus, the job status table identifies the jobs to be processed by multiple worker processes. On the other hand, the Randell patent defines procedures using nodes that define entry and exit conditions. The use of multiple nodes rather than a single job status table does not anticipate and, in fact, teaches away from the claimed subject matter.

In addition, claim 1 describes identifying using a mapping, with a user defined function, a single work process for processing the job based on the second status, wherein the second status is associated with the identified work process. On the other hand, the Randell patent describes that an organization service accesses an organization definition database to determine the exact agent (Col. 6, lines 63-67). Thus, the agent is identified using the organization definition rather

than using the status of the job. Again, the Randell patent does not anticipate the claimed subject matter that uses the status to determine a work process associated with that status.

Claim 1 also describes notifying, with the user defined function, the work process associated with the second status that one job had its status changed to the second status in response to the signal.

Claim 1 describes processing, with the work process, the job that had its status changed from the first status to the second status, wherein the work process queries the job status table to identify the job having the second status which is associated with that work process and to obtain job information. (See, for example, Applicants' Specification at page 7, lines 20-21) On the other hand, the Randell patent describes that a transport service is used to handle the movement of information between agents and a coordination service (Col. 4, lines 55-67) Thus, the Randell patent does not anticipate the worker process querying the job status table to obtain job information. In fact, the Randell patent teaches away from the claimed subject matter. With the movement of data of the Randell patent, there is no need for an agent to query for job information.

Claim 1 describes modifying, with the work process, the status of the job in the job status table after completing the processing of the job, wherein each worker process is associated with one input status and one or more output statuses (e.g., see Applicants' Specification at page 5, lines 25-26), wherein the modified status of the job is associated with another work process, and wherein the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing (e.g., see Applicants' Specification at page 12, lines 3-5). The Randell patent does not describe the claimed job status table. Instead, the Randell patent describes that once work nodes have completed work on information, a routing node activates an APPROVE CHANGE work node, and after this node is completed, the information from the instance is passed to a RELEASE CHANGE work node. (Col. 8, lines 11-30) Thus, rather than simply changing a status in a job

table, the Randell patent describes a complicated system of nodes that are processed to change a status.

Also, each worker process is associated with one input status and one or more output statuses. Therefore, the output status is not easily predictable. Moreover, the mapping may be modified to perform at least one of adding, removing, and modifying statuses associated with work processes to modify an order of the job processing. The Randell patent does not describe these claimed elements.

Thus, claim 1 is not anticipated by the Randell patent. Independent claims 13 and 25 are not anticipated by the Randell patent for at least the same reasons as were discussed with respect to claim 1. Independent claims 7, 19, and 31 are not anticipated by the Randell patent for at least the same reasons as were discussed with respect to claims 1, 13, and 25.

Dependent claims 2-6, 8,-12, 14-18, 20-24, 26-30, and 32-36 incorporate the language of independent claims 1, 13, and 25, respectively, and add additional novel elements. Therefore, dependent claims 2-6, 8,-12, 14-18, 20-24, 26-30, and 32-36 are not anticipated by the Randell patent for at least the reasons discussed with respect to independent claims 1, 13, and 25.

Furthermore, claim 2 describes, for example, processing with the routing process a mapping associating each status with one work process in response to receiving the signal and determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job. On the other hand, the Randell patent identifies an agent using the organization definition (Col. 6, lines 63-67) rather than using a mapping associating each status with one work process.

Claim 3 describes, for example, that modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status. The Randell patent changes the status to Completed or Re-Do (Col. 8, lines 11-39) rather than changing a status to one associated with another work process.

For example, when a status is completed, there is no need for any work process to perform further work for a job with that status.

Claim 5 describes, for example, that there are multiple work processes each associated with one input status and at least one output status, wherein each work process is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one work process is the input status associated with one other work process, and wherein the definition of input and output statuses for work processes, defines the workflow of the job. On the other hand, a set of nodes in the Randell patent defines a procedure. (Col. 4, lines 4-12)

Claim 8 describes, for example, that the work process processes the jobs having the status associated with the work process, terminates processing of the database table if there are no further jobs in the database table having the status associated with the work process, and queries the database table for additional jobs after receiving the notification. On the other hand, the agents of the Randell patent do not perform any querying.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-36 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0466.

The attorney of record invites the Examiner to contact her at (310) 553-7973 if the Examiner believes such contact would advance the prosecution of the case.

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